

## Claims

1. A method of tuning a filter, the filter being associated with a center frequency, comprising the steps of:  
5        configuring said filter as an oscillator;  
         tuning said oscillator to a desired frequency; and  
         reconfiguring said oscillator to operate as said filter with said desired frequency as said center frequency.
- 10    2. A method of tuning a filter according to claim 1, wherein said step of configuring said filter as an oscillator comprises compensating for losses in the filter.
3. A method of tuning a filter according to claim 1, wherein the filter comprises  
15    a bandpass filter.
4. A method of tuning a filter according to claim 1, wherein the filter comprises a notch filter.
- 20    5. A method of tuning a filter according to claim 1, wherein the step of tuning said oscillator comprises providing a tuning signal.
6. A method according to claim 5, further comprising the step of recording the tuning signal which causes said oscillator to operate at the desired frequency.  
25    7. A method according to claim 6, wherein the step of recording the tuning signal comprises sampling and holding the tuning signal.
8. A method according to claim 7, further comprising storing the sampled  
30    signal in a register.

9. A method according to claim 1, wherein the filter circuit includes a tank circuit and the step of tuning the oscillator comprises tuning the resonant frequency of the tank.

5 10. A tunable filter, comprising:  
a filter circuit having a center frequency; and  
a configuration circuit operable to configure said filter circuit as an oscillator, whereby to permit said oscillator to be tuned to a desired frequency, said configuration circuit further being operable to reconfigure said oscillator to operate  
10 as said filter with said desired frequency as said center frequency.

11. A tunable filter according to claim 10, wherein the filter circuit is subject to energy losses, wherein the configuration circuit comprises a compensation circuit operable to compensate for said losses.

15 12. A tunable filter according to claim 11, wherein said losses are due to parasitic resistance, the compensation circuit being operable to provide a negative resistance to compensate for the parasitic resistance.

20 13. A tunable filter according to claim 10, wherein the filter circuit comprises a tank circuit.

14. A tunable filter according to claim 10, wherein the filter circuit includes a varactor for tuning the oscillator.

25 15. A tunable filter, comprising:  
a filter circuit having a center frequency; and  
means for configuring said filter circuit as an oscillator, whereby to permit said oscillator to be tuned to a desired frequency, said means further being operable  
30 to reconfigure said oscillator to operate as said filter with said desired frequency as said center frequency.

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16. A tunable filter according to claim 15, further comprising tuning means for tuning the oscillator.

17. A method of tuning a filter, said filter comprising reactive components which determine a resonant frequency of the filter, said method comprising the steps of:

configuring the filter as an oscillator; and

tuning at least one of said reactive components while the filter is configured as said oscillator.

18. A programmable filter comprising:

a filter circuit;

a compensation circuit; and

a memory for storing at least one digital word;

wherein the compensation circuit is operable to configure said filter circuit as an oscillator, whereby to permit said oscillator to be tuned to at least one desired frequency in accordance with a tuning signal, said tuning signal being derived from said at least one digital word, said compensation circuit further being operable to reconfigure said oscillator to operate as said filter after tuning;

19. A programmable filter according to claim 18, further comprising a digital to analog converter for receiving said at least one digital word and providing said tuning signal.

20. A programmable filter according to claim 18, wherein the filter comprises a bandpass filter.

21. A programmable filter according to claim 20, wherein the memory includes a plurality of digital words, each word corresponding to a tuning signal which represents a desired center frequency for the filter.